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ABSTRACT

Shared savings arrangements for campus energy efficient investments are discussed. Shared savings is a term for an agreement in which a private company offers to implement an energy efficiency program, including capital improvements, in exchange for a portion of the energy cost savings. Attention is directed to: types of shared savings arrangements being offered by the private sector and the way they work; the appropriateness of shared savings for a campus's energy management and financing programs; and negotiating a successful shared savings contract (SSC). Separate consideration is given to issues that may help public sector administrators to develop a shared savings program and to procure contracts. Steps that a shared savings firm will generally follow include a preliminary study, engineering analysis/identifying projects, and an engineering study. A checklist of energy management services that are needed to achieve efficiency is presented, along with advantages and disadvantages of the SSCs. The following elements of SSCs are discussed: calculating savings, schedule of savings, operations and maintenance, purchase option/contract buyout provisions, and contract contingencies. Information is provided on combining SSCs with other financing options, and a checklist is offered that should be considered in qualifying a firm. (SW)

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Shared Savings Financing for College and University Energy Efficiency Investments

by the ENERGY TASK FORCE

Most campuses have the potential for energy savings. If properly managed, this potential can become a financial resource.

The three most common barriers to exploiting energy savings potential are: the lack of in-house expertise and administrative momentum needed to identify and implement projects, the lack of up-front capital, and the lack of guarantees to reassure campus administrators that a project will actually produce the promised savings at a reasonable cost.

This article is one of eight papers in the Energy Task Force series on "Financing Campus Energy Conservation Projects." Financial Planning for Energy Efficiency Investments *was published in the March* Business Officer *and* State Policy Initiatives for Financing Energy Efficiency in Public Buildings *was published in May.*

To obtain a list of all the papers available and to receive additional information on the project, write to the Energy Task Force, 11 Dupont Circle, Suite 250, Washington, D.C. 20036. The task force is composed of NACUBO, the Association of Physical Plant Administrators of Universities and Colleges, and the American Council on Education.

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The potential is so great that it has attracted the interest of private business, which has begun to address and eliminate barriers to energy efficiency investment with what is known as "shared savings" contracting.

Shared savings is a generic term for an agreement in which a private company offers to implement an energy efficiency program, including capital improvements, in exchange for a portion of the energy cost savings that accrue. Typically, such a company enters into a long-term contract and, at its expense, engineers, installs, and manages or comanages an energy efficiency system for a building.

The most attractive feature of this arrangement is that no up-front costs are incurred by the energy user. Capital is provided by the private firm, the cost of that capital being spread over the length of the contract through the service payments paid by the institution out of energy savings generated by the project. Further, the private firm assumes many of the risks of the installation. The institution is required to pay only a percentage of what it saves. If no savings are realized, no payment is due.

This article has several goals. It should help readers to:

- Understand what types of shared savings arrangements are being offered by the private sector and how they work;
- Evaluate the appropriateness of shared savings for a campus's energy management and financing programs; and, finally,
- Negotiate a successful shared savings contract.

A special section for public sector administrators describes the issues that must be dealt with in developing a shared savings program and procuring contracts.

Shared Savings Contracts

The term shared savings includes many types of arrangements. Shared savings contracts (SSCs) generally include three critical services:

—Engineering,
—Financing, and
—Energy system management and operation.

It must be emphasized that SSCs are very flexible. There are a variety of ways to package these services for a successful contract.

Energy Service Contracts. An energy service company is a full-service company that contracts to provide given levels of heating, cooling, lighting, and equipment use. The company assumes all responsibility for the utility bill payments of the institution and makes its profit on the difference between its cost of providing energy services and its fees.

Fees are guaranteed as a negotiated percentage of what the same level of energy services would have cost if the institution had continued to operate at the same level of efficiency. The company makes capital improvements to provide energy services more efficiently, at no direct expense to the institution, which

pays only the contract payments instead of normal utility bills.

Shared Savings. Shared savings contracts and companies function much the same as full-service contracts, but are more common because their scope is less comprehensive, aiming at one project or one series of projects at any given time. An SSC is used to finance specific energy projects and has most often been used for energy control systems. Other types of installations that can be financed by shared savings contracts are heat recovery systems, boiler fuel conversions, and cogeneration. Whole packages of general energy systems improvements have been included under shared savings arrangements. This type of financing, while new, is gaining in frequency and reputation because of its inherent flexibility.

The share of savings required by the investor to make the investment economically attractive depends on the firm's cost of capital, estimated energy savings, and other variables, and will vary from 50 to as high as 90 percent. It is important to remember, though, that payments are based solely on savings realized. If no savings accrue, the energy user is not liable to make payments for capital improvements or services rendered. Thus, the firm has every incentive to perform.

Shared savings contracts are being written for terms of five to twelve years. The security the investor requires is the institution's continued existence and need for the projected level of energy use for the duration of the contract.

Business Procedure

The client must initiate the shared savings relationship by releasing a request for proposal (RFP). The RFP must include information on the institution's energy cost and consumption, existing energy systems, and the energy project(s) being considered.

Shared savings firms should respond with information on the firm's qualifications, business procedure, and financing arrangements, on preliminary savings estimates, and on the proposed engineering and management approach to energy efficiency at the institution.

A shared savings firm will generally develop a client relationship with the following business procedure:

- Preliminary study,
- Complete energy audit,
- Engineering study, and
- Contract negotiation.

Greater commitment is required from the energy user at each successive stage in the process. Shared savings contracting can be made flexible and responsive to both the energy user's and the energy firm's particular needs. A successful contract will be one that all parties help to develop.

A Preliminary Study. First, a shared savings firm will conduct a preliminary study to identify the campus's energy savings potential. The rough information included in the RFP is sufficient for a firm to make a preliminary estimate of savings potential. The firm will then determine if the campus's savings potential meets the investment return threshold. The potential savings must be substantial enough to provide an adequate margin of profit.

The firm will then make its preliminary proposal to the potential client. At this point the energy user must have a good idea of the scope and type of shared savings arrangements that it is seeking and that particular firms are offering.

Engineering Analysis/Identifying Projects. Next, the firm whose proposal is selected will be seeking agreement to move to the second stage: performing a thorough energy engineering analysis to develop a complete set of recommendations for improving energy efficiency or a more complete analysis of the specific project under consideration. To verify the profitability of potential investments on the campus, the shared savings firm must independently evaluate energy efficiency improvements. Frequently, the firm acts as project engineer and takes the lead in the identification and design of efficiency projects, or the firm may evaluate and then finance a project already identified by the physical plant department.

To move to this second stage, the firm will require the energy user to agree to pay at least for the energy study, but not necessarily to enter the final contract. If at the end of the study the contract is signed, the cost of the study can be rolled into the regular service payments.

Once the study is made and projects are identified, the client either selects a single project or a set of projects for execution or declines the proposal and pays the energy firm for its study. If the proposed projects are approved, the energy firm draws up the contract. The firm will install, monitor, and maintain the specified equipment until the end of the contract period at which time the building owner will take ownership of the equipment or renew the contract.

Additional energy management services, such as overall monitoring and data collection, staff training, and development of a planned maintenance program, can be added to the contract.

To work effectively with a shared savings firm in the procurement of services and the contract negotiation process, a campus should outline its decision-making process and its own criteria for a successful contract. To get the most out of an SSC, the contract should:

- Enhance the campus's current energy management program, the skills of staff and officers, and overall campus management strategy;
- Require no additional cost and create immediate cash savings;
- Maximize the total savings from the energy management program (i.e., it must be the best financial alternative).

When Is Shared Savings the Way to Go?

For facilities managers who lack both the initial capital, the in-house expertise, and the organizational momentum to implement an energy management program and who want to contract out the costs, risks, and administrative tasks of aggressive energy management, the use of an SSC is an alternative that should be explored. The SSC is most perfectly and fairly matched with a client who needs or simply wants to buy both kinds of services, management and financial.

A Transitional Tool. Use of an SSC can and should be viewed as a transitional energy management strategy. By shifting some responsibility to the SSC for the first few years of a com-

prehensive energy management program, plant staff can develop additional knowledge about operations, maintenance, and investment for energy efficiency. At the end of the contract term, internal staff can take over the functions that the SSC provided.

Checklist of Energy Management Services. Many combinations of services can be found in the energy service marketplace. When considering whether to procure an energy management or shared savings contract, institutions must conduct a needs assessment and determine the services, such as the following, required to achieve efficiency:

1. Energy audit and engineering,
2. Financing of capital improvements,
3. Construction management,
4. Contracted O&M of energy systems,
5. Development of O&M program,
6. Staff training,
7. Assumption of program risks,
8. Guarantees of energy savings,
9. Follow-up monitoring and evaluation, and
10. Utility rate negotiation.

Checklist: Advantages

1. *No up-front costs.* Financing of large capital improvements is performed by the private firm as part of its services.

2. *"Off-credit" financing.* The projects under the shared savings contract are financed by the private firm and so do not affect the campus's credit limit or other borrowings.

3. *Immediate positive cash flow.* The institution pays only the monthly service fees that are less than and in place of the energy bills that would have been paid had the contract not been entered into. The campus will realize savings in the first month of the contract.

4. *Capital improvements can revert to the building owner.* At the end of the payment period of the contract, all equipment can become the energy user's property.

5. *Guarantees.* Guarantees offered by some firms assign to them the risk of technical performance.

6. *Management assistance.* Operation and maintenance assistance and training are provided. The shared savings firm acts as an expert developer.

Checklist: Disadvantages

1. *Underinvestment.* Most SSCs will not consider implementing energy efficiency improvements that have more than a three-year payback period that could leave many cost-effective measures unimplemented. A two-year payback is often the investment threshold of shared savings firms. Thus, full reliance on an SSC for energy management would result in underinvestment in energy efficiency and lost potential savings. This matter should be discussed with the firm. Plans should be made to develop all energy efficiency projects that are cost effective.

2. *Management intervention.* An SSC involves substantial intervention and perhaps even some loss of control in a building's operations and management. The SSC contract must be supervised carefully and results independently monitored.

3. *Capital cost.* The energy user must share a substantial portion of energy savings. Financial analysis of shared savings versus other options should be performed by laying out the cash flows then deriving the net present value of the net-savings for each option.

Contract Elements

Though contracts will vary, each SSC must address several key issues in order to protect adequately both the energy user and the shared savings firm and to insure a successful project. These contract elements are:

Calculated savings,

Schedule of savings,

Operations and maintenance (O&M),

Purchase option,

Contract buy-out provisions, and

Contract contingencies.

1. Calculating Savings. How are energy savings calculated? The first step is to establish base-year energy use. Base energy use is the amount of energy used in a facility at the current level of efficiency and is derived from historical energy consumption data. If an average of the last three years' energy use is used, the amount should not overstate current consumption and full credit should be given to recent efficiency improvements.

Energy savings are calculated by subtracting actual energy use from the estimated energy use at base-year efficiency. Weather and building operating patterns will affect a building's energy use, and corrections must thus be made. For example, if the number of heating degree days is significantly less during one year, energy use will be less. This decline in consumption should not be counted as savings but as an adjustment to the base energy use. As much as possible, formulas for making these adjustments should be based on historical experience of the building not just on engineering rules of thumb. The savings calculation is made every month of the contract for billing purposes.

In calculating the value of energy savings, marginal or incremental energy prices should be used, not average cost.

Renegotiating base energy use. If material changes are made in the building or its operating patterns that will affect energy use, such as adding new space, major research equipment, or new operating hours, then the base-year energy use will have to be renegotiated.

Verification of billing. The energy user may want to arrange for, and stipulate in the contract, independent monitoring of energy savings results. All factors in the calculation of energy savings should be specified in the contract and should be provided to the institution for verification with each billing.

Energy cost savings are easy to calculate for some types of improvements, such as a boiler conversion, where the difference in fuel prices is simply multiplied by the quantity of energy consumed (this quantity can be easily and directly metered).

2. Schedule of Savings. What is the schedule for sharing the savings realized? Most firms require from 50 to 80 percent of the savings on contracts ranging from five to twelve years. The savings split can vary dur-

ing the contract. For example, an 80/20 (firm/user) split for the first three years of the contract could shift to 50/50.

The savings schedule is negotiable. The energy user should know what capital improvements are to be made by the shared savings firm, the equipment to be used, the firm's expected costs and paybacks, the source of financing, and the tax benefits the firm expects to receive. With this information a balanced agreement that fairly distributes the costs and benefits of the program can be negotiated. The share of savings accruing to the building owner may purposely be made lower during the first year of the contract and higher thereafter. This allows the shared savings firm to recover its investments more quickly, reducing its risk in the program.

Tax benefits. Are the tax benefits enjoyed by the energy firm taken into account in the contract? Shared savings investments are profitable for business partially because of the tax benefits bestowed on energy efficiency investors. The shared savings firm retains ownership of the equipment installed for the duration of the contract. Thus, it is eligible to enjoy the tax benefits associated with ownership, benefits that colleges—as nonprofit, tax-exempt organizations—cannot make use of.

The two main tax benefits are the depreciation expense deduction and the investment tax credit. For the 10 percent investment tax credit to be activated, the shared savings agreement must be construed as a service agreement instead of a financing agreement or lease. It is fair for the institution to inquire about the tax benefits the firm expects to receive and to use this information in negotiating the shared savings schedule.

Is there any upper limit on the amount of energy savings payable to the SSC firm? Savings are a function of energy prices. If prices increase drastically, so will the savings payments, without a corresponding increase in the cost of providing service. While this "upside" profit potential represents an important incentive for the SSC, the customer should require some protection against high invoices resulting from unexpected price increases. For example, a cap could be placed on the total revenues the shared savings firm can receive, or the share of savings going to the customer can be increased if payments exceed a certain amount.

An important feature of SSCs is that both parties to the contract have incentives to maximize savings. Some contracts have provisions to alter the savings split, giving more to the customer if savings exceed target levels.

Guarantees. Is a minimal level of savings guaranteed? Guarantees are based on projected energy unit consumption, not on total energy dollar costs, which are a function of uncertain prices.

3. O&M. How is the responsibility for equipment operations and maintenance distributed? In order to be able to guarantee certain minimum savings, the private firm must retain operating and maintenance responsibility for the equipment after it is installed in the user's premises. This also allows the firm to claim the full tax benefits of ownership because the equipment remains the business's property. Three basic O&M options exist:

- The energy firm's own staff takes over the actual operation of the newly installed equipment.
- The firm provides guidance and supervision of operation.
- The energy firm sets operation standards and then verifies compliance with those standards.

In many cases institutional staff can still perform O&M functions. The firm does not have to assume direct O&M responsibility but may subcontract the work or simply advise existing plant staff to assure that the standards on which energy-savings projections have been based are met.

4. Purchase Option/Contract Buy-Out Provisions. At the end of the contract term, how are the improvements disposed of? Can the contract fix a purchase option price? Could the improvements be donated to the institution, and, if so, what would be the investor's tax benefits? Can the contract be bought out prematurely? If so, at what price?

At the end of the contract term, the client usually has three options: renew the contract, buy the installed equipment, or have the equipment removed. The purchase option is usually for fair-market value. No other price can be set or the firm will jeopardize the definition of the arrangement as a service agreement and lose the investment tax credit.

Most contracts have buy-out provisions that can be exercised before the end of the contract period. Early buy-out can increase the net cash flow to the energy user. This improvement in cash flow occurs because once the buy-out is exercised and the contract terminated, all energy dollar savings accrue to the energy user. The shared savings firm's position has been bought out. The term of the buy-out may not be attractive initially but may become so at some later point in the contract. Whether it is appropriate to exercise the buy-out option depends on the size of the estimated cash-flow improvements and the degree to which that cash-flow amount represents a fair price for the services the firm is continuing to provide and the risk it is assuming.

The tax benefits to the firm of donating the equipment to the campus at the end of the contract term should also be investigated with tax counsel.

5. Contract Contingencies. How will disputes be handled? The contract should provide recourse in case of damage to the building or change in use of facilities that would add or subtract an energy load and should spell out penalties for default and cancellation rights for nonperformance.

An SSC requires a good-faith partnership to resolve problems satisfactorily. The contract may call for an arbitration procedure to deal with a strong disagreement. No one expects such disputes to arise, but it is always best to anticipate them and to have a method of resolving them. The following are additional points to be aware of in contract negotiation:

If the firm doing the system engineering is tied to a specific brand of hardware or technology, the system choices and purchase decisions may be limited and may not be in the best interest of the energy user.

An SSC should include provisions for upgrading the systems to be installed to take advantage of technological advances.

○ The costs to the energy user of contract monitoring should be considered when the savings schedule is negotiated.

Public Institutions

If a shared savings contract is entered into by a public institution, several additional legal and contractual issues arise.

○ The institution may not be able to enter into a long-term contract or financial obligation because of debt restrictions placed on individual campuses within a state university system. This problem can be overcome by inserting a "nonappropriation" or "fiscal funding out" clause in the shared savings contract that makes contract payments subject to appropriations each fiscal period.

○ State requirements for competitive bidding and procurement must be complied with. It may be permissible to classify SSCs as professional services contracts, allowing for negotiated procurement.

○ The account line from which the energy service payments will be made must be identified. SSC payments could be built into the utility budget line.

○ The relationship between the shared savings firm and existing plant civil service or union staff must be clarified and lines of authority and responsibility clearly delineated.

Before an institution moves far in the SSC negotiation process, it should determine its ability to enter into contracts. It is often easier for a public institution to contract for professional services than for major purchases

Combining SSCs with Other Financing Options

It can be advantageous for an institution to provide its own financing of capital improvements but still contract for the engineering, energy system management, and risk assumption features of SSCs. For example, an institution could negotiate a normal shared savings agreement yet arrange its own project financing (e.g., a municipal lease for a public university and a private placement of tax-exempt debt for an independent college). Peeling off the financing function from the SSC could overcome restrictions against entering multiyear contracts, a major barrier to widespread use of SSCs by public institutions.

By not having its capital installed in the client's physical plant, a firm could enter a cancelable service contract. If the firm makes its profits primarily by providing services rather than financing, it may be receptive to this arrangement. In addition, the institution may enjoy lower effective capital cost and be able to finance longer payback projects by arranging its own external financing —either tax-exempt leasing, bonds, or bond pools. A calculation to determine whether tax-exempt financing provides a lower cost of capital than private financing that takes advantage of tax credits needs to be performed.

Qualifying a Firm

The shared savings industry is new, but a growing number of firms are ready to serve the higher education market, both public and independent.

Each firm must be scrutinized carefully. The following should be examined:

○ Description of the firm's organization and expertise,

○ Resumes of key individuals,

○ Experience with similar projects,

○ Client references,

○ Credit and financial references,

○ Ability to perform over the term of the contract, and

○ Ability to provide on-site service.

It is appropriate to investigate the firm's source of financing for capital improvements, especially if the investment is designed as a tax shelter. A solid working trust must be established with the firm before it is engaged.

Further Information & Technical Assistance

For further information and technical assistance on shared savings contracting, contact the Energy Task Force (ETF). ETF can provide samples of the following:

○ Shared savings contracts,

○ Procurement documents (RFPs),

○ Legislation authorizing SSCs in the public sector, and

○ Financial analyses of SSCs. ◆

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